TI044

Installation and User Guide

Industrial Indoor/Outdoor Solar Timer

❶ Applications

The TI044 is a heavy-duty indoor/outdoor timer designed to control the following loads:

Load type	Maximum load	Examples
Resistive load	3600 W (30 A @ 120 V)	• incandescent lights • halogen lights • block heaters
Inductive load	1200 W (10 A @ 120 V)	• fluorescent lights • compact fluorescent lights (CFL) • sodium lamps • electronic ballasts
Motor	1.5 hp @ 120 V	• pumps • fans

The TI044 is equipped with two normally-open (NO) dry contacts identified as **Load 1** and **Load 2** for connecting two independently operated loads:

- **Load 1** follows the schedule that you have programmed into the timer when placed in automatic mode. The load can also be activated or deactivated manually similar to the operation of a regular switch.
  A single-pole switch can be connected to the timer to control **Load 1** as in a 3-way installation. For example, the timer can be installed outside whereas the switch can be located remotely (e.g., inside the house).
- **Load 2** always follows the sunset/sunrise program; i.e., it is activated at sunset and deactivated at sunrise. It is usually used for night lighting.

❷ Installation

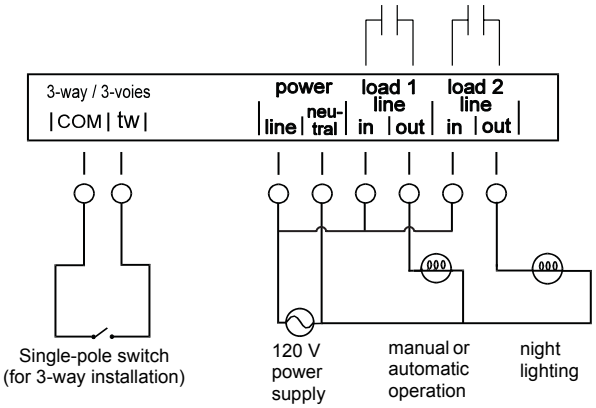
❶ Cut power at the circuit breaker to avoid electric shock.

❷ Connect the power supply between **power line** and **power neutral** terminals.

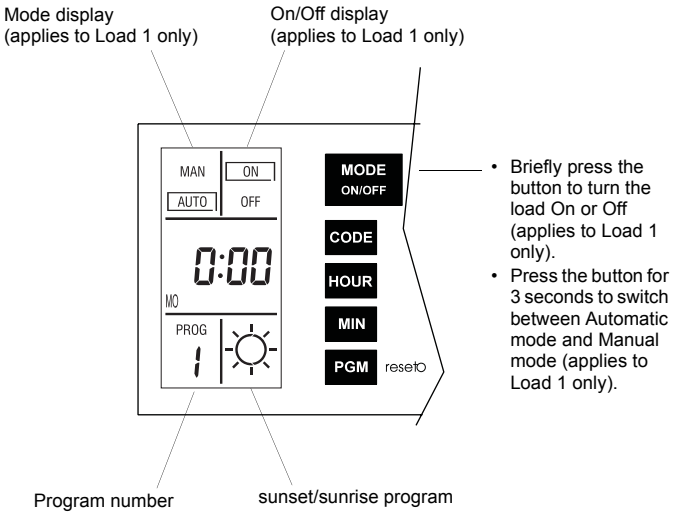
❸ Connect the load and its power supply in series between **Load 1 in** and **Load 1 out** or between **Load 2 in** and **Load 2 out** depending on the application.

***NOTE**: For a 3-way installation, connect a standard single-pole switch to the **3-way** terminals of the timer as shown on the wiring diagram.*

❹ Apply power at the circuit breaker.



❸ Operation



3.1 Load 1

Load 1 can operate in Manual or Automatic mode. To switch between the two modes, press and hold the **MODE** button for 3 seconds.

Manual Mode

In Manual mode, the TI044 operates like a regular switch to control Load 1. Briefly press the **MODE** button to activate or deactivate the load. (If you have connected a remote switch to the timer for a 3-way installation, the switch can also be used to activate or deactivate Load 1.) The mode indicator (**MAN**) and the state (**ON** or **OFF**) are displayed.

Automatic Mode

In Automatic mode, the TI044 controls Load 1 according to the programmed schedule (see section 6). The mode indicator (**AUTO**), the state (**ON** or **OFF**) and the current program number are displayed.

To temporarily override the programmed schedule, press the **MODE** button or use the remote switch (if connected). The new state indicator will flash to show that this state is temporary. The override remains in effect until you press the **MODE** button (or use the remote switch) or until the beginning of the next program.

3.2 Load 2

Load 2 follows the sunset/sunrise program (regardless of the operating mode of the timer). For example, if Load 2 is a light, the light will turn On at sunset and turns Off at sunrise.

***NOTE**: To use Load 2, you first need to enter the city coordinates and set the date (see section 6).*

4 Setting the Clock

***NOTE**: The switch displays the time in 24-hour format by default or following a reset.*

❶ To switch between 12-hour format and 24-hour format, proceed as follows:

a) Press the **MODE** button to ensure the **MAN** or **AUTO** indicator is displayed.

b) Briefly press the **MIN** and **HOUR** buttons simultaneously (**0:00** display = 24-hour; **12:00** display = 12-hour).

❷ Set the time using the **HOUR** and **MIN** buttons. For the 12-hour time format, if you are setting an afternoon time, ensure **PM** appears on the screen.

❸ Press the **MODE** button to return to normal operation.

5 Daylight Savings Time

This procedure sets the switch for daylight savings time or for standard time.

❶ Press the **CODE** button four times.

❷ Press the **MIN** button to switch between **nor** and **Ad**.

nor	Standard time / Normal time / Winter time
Ad	Daylight savings time / Advanced time / Summer time

❸ Press the **MODE** button to return to normal operation.

6 Sunset/Sunrise Program

***NOTE 1**: Load 2 always follows the sunset/sunrise program. Therefore, to use Load 2, you need to enter the city coordinates (longitude and latitude) and set the date.*

***NOTE 2**: By default, once you have programmed the sunset/sunrise parameters, Load 1 will follow the sunset/sunrise program when you place the timer in Automatic mode. To set your own schedule, see section 7.*

6.1 Determining the sunset/sunrise parameters

Fill out the following table:

Latitude	Longitude	Day #	nor/Ad	Lc

1) LATITUDE & LONGITUDE: Enter the coordinates of your city or the nearest city using the supplied table. If none of the cities in the table is applicable, this information is usually available on the Internet.

NOTE: Add a minus sign when entering a south latitude coordinate or a west longitude coordinate.

2) DAY #: Enter the day #. (Add the code of the current month to the current date.)

For example: For June 24th, the day # = 151 + 24 = 175

January	0	May	120	September	243
February	31	June	151	October	273
March	59	July	181	November	304
April	90	August	212	December	334

3) nor/Ad: If your country has daylight savings time, select the current time period.

nor	Standard time / Normal time / Winter time
Ad	Daylight savings time / Advanced time / Summer time

4) Lc: If your city's time zone is based on political or economic boundaries instead of its coordinates, your lights might switch On/Off too early or too late with respect to sunset and sunrise. Therefore, apply a correction factor (+1 or -1). Otherwise, leave it at 0.

6.2 Programming the sunset/sunrise parameters

Once you have completed section 6.1, proceed as follows:

❶ Press the **CODE** button until the desired parameter appears. The parameters appear in the following order.

Parameter	Default setting	Possible settings	Buttons used
Latitude (LAT)	00	-65 to 65	HOUR & MIN
Longitude (LONG)	000	-180 to 180	HOUR & MIN
Day number (DAY #)	000	1 to 365	HOUR & MIN
Daylight savings time	nor	nor / Ad	MIN
Local correction factor (Lc)	0	-1, 0, 1	MIN

❷ Press the **HOUR** or **MIN** button to modify the value (see table above for the buttons to use).

❸ Press the **MODE** button to return to normal operation.

7 Programming the Schedule

***NOTE**: Applies to Load 1 only. The programmed schedule does not affect Load 2 which follows the sunset/sunrise program only.*

The switch can hold 2 programs which are repeated every day. When you place the timer in Automatic mode, it will activate the load at the start of each program and deactivate it at the end of the program. You need to set the following parameters:

P1 ON : Start time of program 1
P1 OFF : End time of program 1
P2 ON : Start time of program 2
P2 OFF : End time of program 2

❶ Press the **PGM** button until the desired parameter is displayed.

If you have entered your city's parameters (see section 6), the parameters **P1 ON** and **P2 OFF** show the sunset time and sunrise time for this time of the year. If Load 1 is used for lighting, when the timer will be placed in **AUTO** mode, it will turn the light ON at sunset and will turn it Off at sunrise. For example:

P1 ON : **20:38** (sunset)
P1 OFF : **--:--** (blank)
P2 ON : **--:--** (blank)
P2 OFF : **6:10** (sunrise)

❷ Press the **HOUR** and **MIN** buttons to set the time.

Example: If you want your lights to turn On at sunset and to turn Off at 10:00 PM, set **P1 OFF** to **22:00**. If you also want your lights to turn back On at 5:00 AM then turn Off at sunrise, set **P2 ON** to **5:00**.

P1 ON	:	**20:38** (sunset)
P1 OFF	:	**22:00** (programmed)
P2 ON	:	**5:00** (programmed)
P2 OFF	:	**6:10** (sunrise)

NOTE: **P1 OFF** and **P2 OFF** have priority over **P1 ON** and **P2 ON** respectively. For example, if sunrise is at 4:58 and **P2 ON** is set to 5:00, the lights will not turn on.

You can replace the sunrise and sunset times by fixed times. Select program **P1 ON** or **P2 OFF** and enter the desired time using the **HOUR** and **MIN** buttons.

❸ Press the **MODE** button to return to normal operation.

Clearing a programmed time

❶ Press the **PGM** button to display the programmed time.

❷ Press the **CODE** button. The time will be erased and **--:--** will be displayed.

***NOTE**: For **P1 ON** and **P2 OFF**, if you have programmed the city parameters, the programmed time will be replaced by sunset time and sunrise time respectively.*

❸ Press the **MODE** button to return to normal operation.

8 Technical Specifications

Supply: 120 VAC, 50 / 60 Hz
3-way input: Requires a dry contact
Maximum load: See section 1
Operating temperature range: -40 °C to 50 °C (-40 °F to 122 °F)
Solar table precision: +/- 11 min. (max error around poles)
Enclosure type: 3R
Certifications: CSA & UL

☑ Warranty

AUBE warrants this product, excluding battery, to be free from defects in the workmanship or materials, under normal use and service, for a period of three (3) years from the date of purchase by the consumer. If at any time during the warranty period the product is determined to be defective or malfunctions, AUBE shall repair or replace it (at AUBE's option).
If the product is defective,

(i) return it, with a bill of sale or other dated proof of purchase, to the place from which you purchased it, or
(ii) contact AUBE. AUBE will make the determination whether the product should be returned, or whether a replacement product can be sent to you.

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by AUBE that the defect or malfunction was caused by damage which occurred while the product was in the possession of a consumer.
AUBE's sole responsibility shall be to repair or replace the product within the terms stated above. AUBE SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. Some provinces, states or regions do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.
THIS WARRANTY IS THE ONLY EXPRESS WARRANTY AUBE MAKES ON THIS PRODUCT. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS HEREBY LIMITED TO THE THREE-YEAR DURATION OF THIS WARRANTY. Some provinces, states or regions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.
This warranty gives you specific legal rights, and you may have other rights which vary from one province, state or region to another.

☎ Customer Assistance

If you have any questions on the product installation or operation, contact us at:

705 Montrichard Avenue
Saint-Jean-sur-Richelieu, Quebec
J2X 5K8
Canada
Tel.: (450) 358-4600
Toll-free: 1-800-831-AUBE
Fax: (450) 358-4650
Email: aube.service@honeywell.com

For more information on our products, go to
www.aubetech.com

CANADA

CITY	LAT	LONG	Lc
BANFF	51	-115	1
BURNABY	49	-122	0
CALGARY	51	-114	1
CAPE - DORSET	64	-76	0
CHICOUTIMI	48	-71	0
DAWSON	64	-139	1
EASTMAIN	52	-78	0
EDMONTON	53	-113	1
FORT SEVERN	56	-87	1
HALIFAX	44	-63	0
IGALUIT	63	-68	0
INUKJUAK	58	-78	0
KITCHENER	43	-80	0
LONDON	42	-81	0
MISTASSINI	50	-73	0
MONTREAL	45	-73	0
OSHAWA	43	-78	0
OTTAWA	45	-75	0
QUEBEC	46	-71	0
REGINA	50	-104	1
RICHMOND	49	-123	0
SASKATOON	52	-106	1
SEPT-ILES	50	-66	-1
SHERBROOKE	45	-71	0
ST. ANTHONY	51	-55	0
SAINT JOHN (NB)	45	-66	0
ST. JOHN'S (NFLD)	47	-52	0
SUDBURY	46	-81	0
THUNDER BAY	48	-89	1
TORONTO	43	-79	0
TROIS-RIVIÈRES	46	-72	0
URANIUM CITY	59	-108	0
VANCOUVER	49	-123	0
WINDSOR	42	-83	1
WINNIPEG	49	-97	0

USA

CITY	LAT	LONG	Lc
ABILENE	32	-99	1
ALBUQUERQUE	35	-106	0
ALLENTOWN	40	-75	0
AMARILLO	35	-101	1
ANCHORAGE	61	-149	1
ATLANTA	33	-84	1
AUSTIN	30	-97	0
BAKERSFIELD	35	-119	0
BALTIMORE	39	-76	0
BATON ROUGE	30	-91	0
BEAUMONT	30	-94	0
BILLINGS	45	-108	0
BIRMINGHAM	33	-86	0
BOISE	43	-116	1
BOISE CITY	36	-102	1
BOSTON	42	-71	0
BROWNSVILLE	25	-97	0
BUFFALO	42	-78	0
CEDAR RAPIDS	41	-91	0
CHARLOTTE	35	-80	0
CHATTANOOGA	35	-85	1
CHEYENNE	41	-104	0
CHICAGO	41	-87	0
CINCINNATI	39	-84	1
CLEVELAND	41	-81	0
COLOMBUS	39	-82	0
COLORADO SPRINGS	38	-104	0
CORPUS CHRISTI	27	-97	0
DALLAS	32	-96	0
DENVER	39	-104	0
DES MOINES	41	-93	0
DETROIT	42	-83	1
DULUTH	46	-92	0
EL PASO	31	-106	0
ERIE	42	-80	0
EUGENE	44	-123	0
EVANSVILLE	37	-87	0
FLINT	43	-83	1
FORT LAUDERDALE	26	-80	0
FORT WAYNE	41	-85	1
FRESNO	36	-119	0
GRAND RAPIDS	42	-85	1
GREAT FALLS	47	-111	0
GREENSBORO	36	-79	0
HAMPTON	37	-76	0
HARTFORD	41	-72	0
HONOLULU	21	-157	0
HOUSTON	29	-95	0
HUNTSVILLE	34	-86	0
INDIANAPOLIS	39	-86	1
JACKSON	32	-90	0
JACKSONVILLE	30	-81	0
KANSAS CITY	39	-94	0
KNOXVILLE	35	-83	1
LAKEWOOD	39	-105	0
LANSING	42	-84	1
LAREDO	27	-99	1
LAS VEGAS	36	-115	0
LEXINGTON	38	-84	1
LINCOLN	40	-96	0
LITTLE ROCK	34	-92	0
LONG BEACH	33	-118	0
LOS ANGELES	34	-118	0

USA

CITY	LAT	LONG	Lc
LOUISVILLE	38	-85	1
LUBBOCK	33	-101	1
MACON	32	-83	1
MADISON	43	-89	0
MEMPHIS	35	-90	0
MIAMI	25	-80	0
MILWAUKEE	43	-87	0
MINNEAPOLIS	44	-93	0
MOBILE	30	-88	0
MODESTO	37	-120	0
MONTGOMERY	32	-86	0
NASHVILLE	36	-86	0
NEW ORLEANS	29	-90	0
NEW YORK	40	-74	0
NORFOLK	36	-76	0
OKLAHOMA CITY	35	-97	0
OMAHA	41	-95	0
ORLANDO	28	-81	0
OVERLAND PARK	38	-94	0
OXNARD	34	-119	0
PEORIA	40	-89	0
PHILADELPHIA	40	-75	0
PHOENIX	33	-112	0
PITTSBURG	40	-79	0
PLANO	33	-96	0
PORTLAND	45	-122	0
PROVIDENCE	41	-71	0
RALEIGH	35	-78	0
RAPID CITY	44	-103	1
RENO	39	-119	0
RICHMOND	37	-77	0
ROANOKE	37	-79	0
ROCHESTER	43	-77	0
ROCKFORD	42	-89	0
SACRAMENTO	38	-121	0
SALT LAKE CITY	40	-111	0
SAN ANTONIO	29	-98	1
SAN DIEGO	32	-117	0
SAN FRANCISCO	37	-122	0
SANTA ROSA	38	-122	0
SAVANNAH	32	-81	0
SEATTLE	47	-122	0
SHREVEPORT	32	-93	0
SOUTH BEND	41	-86	0
SPOKANE	47	-117	0
SPRINGFIELD (IL)	39	-89	0
SPRINGFIELD (MA)	42	-72	0
SPRINGFIELD (MO)	37	-93	0
ST. LOUIS	38	-90	0
SYRACUSE	43	-76	0
TALLAHASSEE	30	-84	1
TAMPA	27	-82	0
TOLEDO	41	-83	1
TOPEKA	39	-95	0
TUCSON	32	-110	0
TULSA	36	-95	0
VIRGINIA BEACH	36	-75	0
WACO	31	-97	0
WASHINGTON DC	38	-77	0
WICHITA	37	-97	0
WINSTON-SALEM	36	-80	0
YONKERS	40	-73	0
YOUNGSTOWN	41	-80	0

MEXICO

CITY	LAT	LONG	Lc
TIJUANA	32	-117	0
NOGALES	31	-111	0
CIUDAD JUAREZ	31	-106	0
MATAMOROS	26	-97	0
NUEVO LAREDO	27	-99	1
MONTERREY	25	-100	1
CHIHUAHUA	28	-106	0
MAZATLÁN	23	-106	0
TAMPICO	22	-98	1
ZACATECAS	22	-102	1
LÉON	21	-101	1
LA PAZ	24	-110	0
MEXICO CITY	19	-99	1
PUEBLA	19	-98	1
GUADALAJARA	20	-103	1
OAXACA	17	-96	0
ACAPULCO	16	-100	1
CANCUN	21	-86	0
MERIDA	21	-89	0

Puerto Rico

CITY	LAT	LONG	Lc
SAN JUAN	18	-66	0

Dominican Republic

CITY	LAT	LONG	Lc
SANTO DOMINGO	18	-70	1